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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,870	02/25/2002	Mark J. Schnitzer	5	6317

7590 02/07/2005

Docket Administrator (Room 3J-219)  
Lucent Technologies Inc.  
101 Crawfords Corner Road  
Holmdel, NY 07733-3030

EXAMINER

JUNG, WILLIAM C

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/082,870

Applicant(s)

SCHNITZER, MARK J.

Examiner

William Jung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-21 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-21 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by *Takahashi et al* (US 4,916,534).

Takahashi et al substantially disclose all claimed features in claims 1-21.

**Claims 1, 11, and 13:** Takahashi et al disclose an optical system where the system is an endoscopic optical imaging system having first and second ends, the probe consisting a GRIN lens 40 configured to carry illumination light over at least a distance as long as the length of the probe, the first end positioned to receive the illumination light from the first optical aperture, and a detector configured to measure emitted light characteristic from the first end in response to multi-photon absorption events produced by the illumination light and producing an output signal for a multi-photon image (col. 2, lines 6-19; col. 3, lines 16-20; col. 9, lines 47-65; col. 10, lines 25-42).

**Claims 2 and 3:** Takahashi et al disclose further where the GRIN lens is coupled to a prism 9 with pitch length about the length of the lens (col. 4, lines 31-46).

**Claims 4-8, 12, 16, and 21:** Takahashi et al disclose a relay GRIN lens and an objective GRIN lens connected serially (col. 9, lines 47-65).

**Claims 9, 10, 14, 15, and 17-20:** Takahashi et al disclose measuring if intensity and or phase of the emitted response received from the light emitted region. In addition, Takahashi et al disclose that the light source may be pulses of laser light (col. 8, line 43-col. 10 line 24).

Although, Takahashi et al do not specifically disclose that the GRIN lens is compound GRIN lens, the compound is not well defined in specific structure. Thus, compound GRIN may be construed as lens with more than one layer or multiple compositions. Takahashi et al discloses these layers in col. 10, lines 54-65 where the GRIN lens has compound of coating layers.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Takahashi et al*** (US 4,916,534) in view of ***Reed et al*** (US 6,542,665 B2).

Takahashi et al substantially disclose all claimed features in claims 1-21.

**Claims 1, 11, and 13:** Takahashi et al disclose an optical system where the system is an endoscopic optical imaging system having first and second ends, the probe consisting a GRIN lens 40 configured to carry illumination light over at least a distance as long as the length of the probe, the first end positioned to receive the illumination light from the first optical aperture, and a detector configured to measure emitted light characteristic from the first end in response to multi-photon absorption events produced by the illumination light and producing an output

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signal for a multi-photon image (col. 2, lines 6-19; col. 3, lines 16-20; col. 9, lines 47-65; col. 10, lines 25-42).

*Claims 2 and 3:* Takahashi et al disclose further where the GRIN lens is coupled to a prism 9 with pitch length about the length of the lens (col. 4, lines 31-46).

*Claims 4-8, 12, 16, and 21:* Takahashi et al disclose a relay GRIN lens and an objective GRIN lens connected serially (col. 9, lines 47-65).

*Claims 9, 10, 14, 15, and 17-20:* Takahashi et al disclose measuring if intensity and or phase of the emitted response received from the light emitted region. In addition, Takahashi et al disclose that the light source may be pulses of laser light (col. 8, line 43-col. 10 line 24).

However, Takahashi et al do not specifically disclose that the GRIN lens is compound GRIN lens. Reed et al disclose is figure 6B that GRIN fiber lens is a compound GRIN where materials 43A and 43B have two different refractive index and length. Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to apply Reed et al's teaching of compound GRIN to Takahashi et al.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Jung, Ph.D. whose telephone number is 571-272-4739. The examiner can normally be reached on Mon-Fri 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WCO  
January 23, 2005

  
**BRIAN L. CASLER**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700